Cytologic and Radiologic Observations in Lymphosarcoma of the Stomach

Report of a Case

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LYMPHOSARCOMA of the stomach is a relatively uncommon tumor, usually not diagnosed preoperatively,[2, 9] but since nearly 600 cases have been reported[12] in numerous excellent papers, the addition of a single case report could not be justified without good reason. The authors have seen no reports of cytologic examination of gastric contents in this disease, however, so the cytologic observations and radiologic features in the case herein reported were considered worthy of record.

Gastric lymphosarcomas are commonly located on the greater or lesser curvatures or on the posterior wall, with the orifices usually free.[8, 13] In contrast with carcinomas they originate in the submucosa and tend to ulcerate the mucosa late in the disease, but extension to the serosa with perforation occurs more commonly than in carcinoma.[2]

Symptoms are not characteristic and may suggest a peptic ulcer.[2, 10, 13, 14] On gastroscopic examination, a smoothly marginated polypoid submucous tumor covered by relatively normal mucous membrane, diffuse enlargement of rugae, and ulcerated lesions covered by a gelatinous secretion are suggestive of lymphosarcoma.[11, 13] Similar observations demonstrated by roentgenologic examination are also suggestive of lymphosarcoma, although it should be noted that these signs may occur also with carcinomas.[1, 3, 4, 5, 6, 7, 15]

REPORT OF CASE

The patient, a 31-year-old white male physician, entered the hospital on Sept. 12, 1949, complaining of diarrhea, progressive anorexia, and abdominal pain of six months' duration, with a weight loss of 15 pounds. The diarrhea was of the magnitude of eight to ten daily liquid stools, without mucus or gross blood. The pain was mainly on the right side of the abdomen, but tended to involve the entire abdomen when severe, and appeared about four hours after meals. It was relieved by ingestion of milk, cheese or Amphojel,® by atropine, or by a bowel movement. Alcohol, bulky food, and exercise aggravated the pain. In June 1949, thinking he had amebiasis, the patient treated himself with chloroquine, which relieved the symptoms for a few days. There was occasional vomiting. The patient had not been jaundiced.

Four years previously a similar episode of diarrhea, lasting three months, had occurred. No parasites were found at that time and roentgen investigation was reported to have indicated "gastrointestinal allergy." The axillary, cervical, and inguinal lymph nodes were known to have been enlarged for more than 20 years, but in the patient's opinion there had been no recent change in that respect.

The patient was well developed, but thin. Pallor was the most striking feature in his appearance. Several discrete cervical, inguinal, and left axillary lymph nodes 0.5 to 1 cm. in diameter, and a small left epitrochlear node were palpated. Mild mid-epigastric tenderness was noted. The hemoglobin content of the blood was 10.9 gm. per 100 cc. Leukocytes numbered 8,300 with neutrophils 76 per cent, lymphocytes 12 per cent, monocytes 7 per cent, and eosinophils 5 per cent. The packed red cell volume was 37 per cent of the whole blood. There was occult blood in one of three stool specimens. Gastric analysis showed 61 degrees free, 75 degrees total acidity. Results of thymol turbidity and flocculation tests were normal. The albumin and globulin contents of the blood and the ratio also were normal.

A massive fasting residue was observed in the initial roentgen gastrointestinal examination and at six hours there was 75 per cent barium residue in the stomach. Large rugae were observed, and there was a suggestion of a large shallow ulcer crater. In a roentgen examination, following a week of gastric lavage, a large ulcerating lesion (Figures 1 and 2) was observed on the posterior wall of the pars media of the

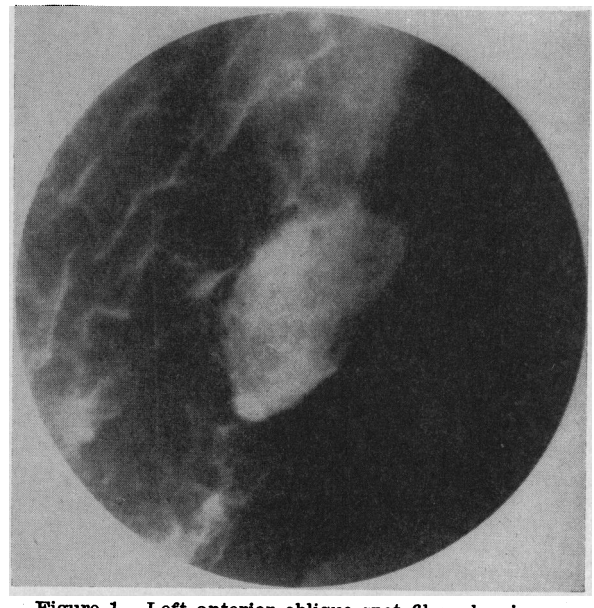

Figure 1.—Left anterior oblique spot film, showing crater and enlarged rugae.

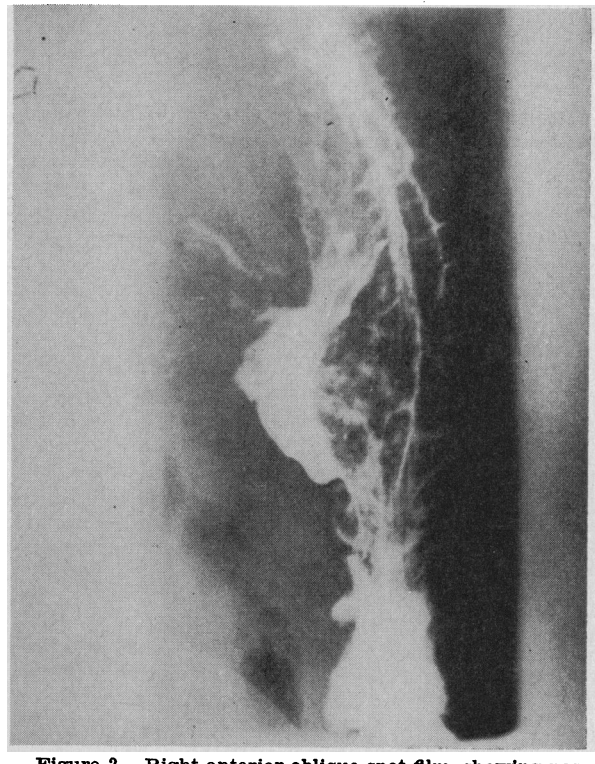

Figure 2.—Right anterior oblique spot film, showing posterior location of ulcer.

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stomach, near the greater curvature, with enlargement of the rugae in the distal two-thirds of the stomach. There was no obstruction at this time. In a roentgen examination with barium enema a narrowing of the transverse colon near the splenic flexure, with no disturbance in the mucosa, was observed. This apparently was the result of extrinsic disease. The x-ray diagnosis was ulcerating lesion of the stomach.

In gastroscopic examination, generally enlarged gastric rugae and a large defect in the gastric mucosa were observed. The base of the ulcer was 5 x 4 cm. in diameter with heaped-up, irregular, and undermined margins, and a bloody exudate in several areas in the margins. The gastroscopic diagnosis was ulcerating lesion, most likely carcinoma.

Malignant cells were noted in microscopic examination of smears prepared from material obtained by gastric lavage, stained by the Papanicolaou technique, and a hematoxylin- and eosin-stained paraffin button. Partial gastrectomy with gastrojejunostomy was carried out Oct. 3, 1949.

At operation, a rough, nodular, brawny lesion was palpated along the mid-portion of the greater curvature. There were numerous enlarged lymph nodes around the pylorus, and others extended along the course of the aorta to the under surface of the diaphragm. The liver was apparently not involved. The lesion had penetrated the posterior stomach wall, perforated, and attached itself to the superior surface of the transverse mesocolon, causing the deformity of the transverse colon noted in x-ray examination. Grossly observed, the lesion was thought to be lymphosarcoma. Fifteen days after operation roentgen therapy, directed toward the periaortic nodes, was started.

Pathologic Examination: On Sept. 27 gastric lavage (referred to previously) was done and, after centrifugation, smears were prepared from the sediment and stained by the Papanicolaou technique, using EA65 as a counterstain. A paraffin button was prepared from the remainder of the sediment, and stained with hematoxylin and eosin. In microscopic examination of the smears (Figure 3) and paraffin button sections, numerous atypical cells, occurring singly and in small clumps, were observed. These cells were sometimes multinucleated but were usually mononucleated and the criteria of malignancy observed in them included prominent nucleoli, condensation and stringing of chromatin, dense, often irregular nuclear membranes, and abnormal nuclear-cytoplasmic ratio. These cells, although considered malignant, differed from those in epithelial malignant diseases of the stomach previously observed in this laboratory by virtue of the extremely vesicular nucleus. Hyperchromatism, commonly described in malignant cells in gastric washings, was not observed in this case.

The operative specimen submitted for pathologic examination (Figure 4) consisted of the greater portion of a stomach as well as a separate lymph node. In external examination of the stomach, the posterior wall was observed to be thickened, with a perforation near the greater curvature. A tumor mass measuring 16.5 x 15.5 x 2 cm. was observed on the mucosal surface. The rugal pattern adjacent to the tumor in general was accentuated, but alternating areas of smoothness and nodularity were observed in other areas.

Sections were taken through the ulcerated area, through the principal bulk of the tumor, and at both lines of resection. In the latter areas the stomach was free of tumor. The tumor of the stomach and the lymph node were similar in histologic appearance. In both there was widespread infiltration by mature and immature lymphocytes which involved all layers of the stomach (Figure 5). There was no increase in reticulum in either the lymph node or the sections from the stomach, and no atypical cells suggestive of Sternberg-Reed cells were identified. The diagnosis was lymphosarcoma of the stomach, with involvement of regional lymph nodes.

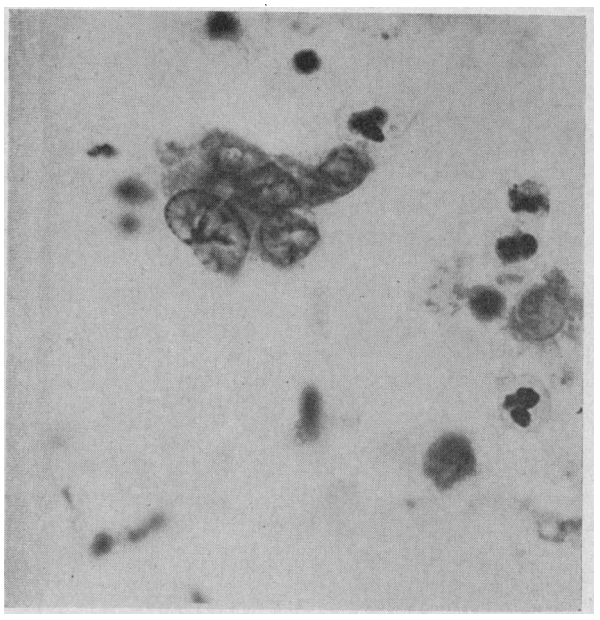

Figure 3.—Clump of malignant cells obtained by gastric lavage and stained by the Papanicolaou method (x 900).

Figure 4.—Serosa of stomach, showing perforation and nodularity.

DISCUSSION

The clinical diagnostic indices of lymphosarcoma of the stomach are so similar to those of carcinoma that the true diagnosis may be given little consideration. Age appears to be the single factor which might arouse suspicion of lymphosarcoma in a patient who has pain suggestive of ulcer, with weight loss and anorexia, and an appearance suggesting

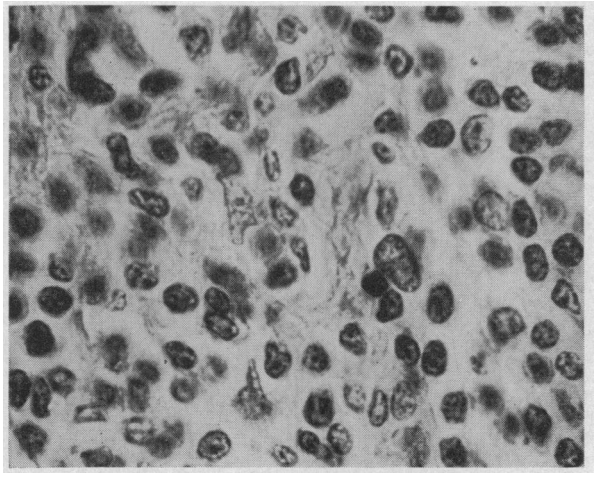

Figure 5.—Paraffin section through tumor. Hematoxylin- and eosin-stained (×900).

malignant disease. The physical findings may be minimal. Gastroscopy and roentgenology are of value in locating the disease, and in suggesting that the process may be malignant, but they are generally conceded not to replace histologic study for the differentiation of lymphosarcoma from carcinoma.

Although the cytologic examination of gastric washings in the case reported verified the preoperative clinical diagnosis of malignancy, it is believed that the procedure probably would not be too valuable in early diagnosis. The lesion does not involve the superficial structures of the stomach early, and it is probable that only after ulceration has occurred will malignant cells be recoverable from the gastric washings.

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